White-Nose Syndrome

Little Brown Bats in New York with WNS. Photo by: Nancy Heaslip

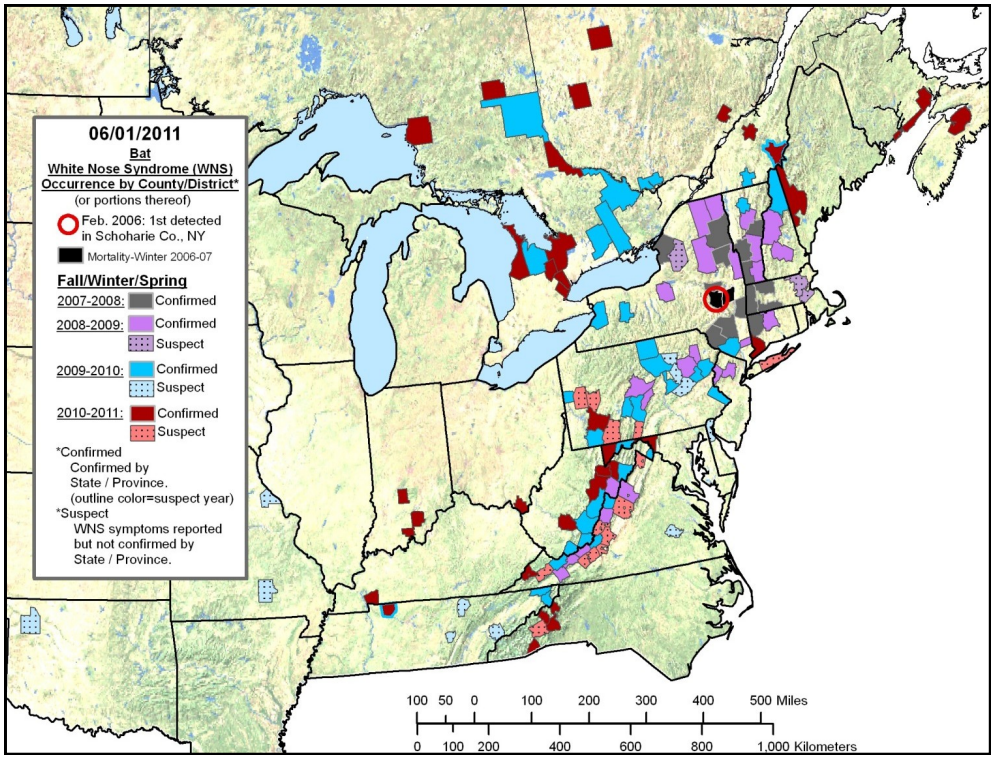
WHAT IS WHITE-NOSE SYNDROME?

White-Nose syndrome (WNS) is a disease causing mass die-offs of bats at hibernation sites in the U.S. and Canada (90—100 % at some locations, see map). An estimated 1 million or more bats have died so far.

The disease is associated with a fungal pathogen called *Geomyces destructans*, which erodes the skin tissue. The fungus may also cause bats to arouse from hibernation and use up energy reserves prematurely; resulting in dehydration and starvation. Scientists are researching the dynamics of this disease, how it affects different bat species, and how to contain or cure it.

SIGNS OF WHITE-NOSE SYNDROME

- White fungus usually on the muzzle, also found on wings, ears and/or tail. Not all affected bats have visible fungus, but it can still be present in skin tissue.
- The fungus requires cold temperatures to grow, so it is not usually seen on bats during summer or fall.
- Low weights, emaciation and wing scarring.
- Strange behaviors at hibernacula: bats flying outside during the day in winter, clustering near the entrance or other unusual areas.
- Dead or dying bats found on the ground, buildings, trees or other structures in winter.



SPECIES AFFECTED

So far, only bats that hibernate communally in caves or mines are affected. This includes little brown bat, tri-colored bat (formerly eastern pipistrelle), big brown bat, northern long-eared bat, small-footed bat, Indiana bat, Southeastern myotis and Cave bats. The fungus was found on live little brown bats in Delaware in spring 2010.

No animals other than bats have exhibited signs of WNS. No reported human illness have been linked to WNS.

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WHY BE CONCERNED?

Heavy fungus load, Gregory Turner, PA

- White-Nose Syndrome could result in regional extinctions of some once-common bat species.
- Northeastern bats are insectivores. They eat many nuisance insects like mosquitos, moths, agricultural pests. One bat can eat 50—75% of its body weight in flying insects each summer night. That's nearly 600 insects per hour!
- The primary Delaware species impacted by WNS are little and big brown bats and tricolored bats.
- White-Nose Syndrome spread quickly, and now impacts 19 states and 4 Canadian provinces; see map. The disease may soon make its way to some of the largest hibernation sites in the world. The result could be catastrophic.
- WNS may reduce the reproductive rates of bats who survive lighter infections of the disease, further decreasing bat populations.

HOW IS IT SPREAD?

- The fungal spores can spread through the air, directly from bat-to-bat and have been found attached to materials (like cloth) that have been in affected sites.
- Migrating bats could carry spores hundreds of miles.
- People (cavers, researchers and casual cave visitors) may inadvertently be spreading it by visiting affected caves and then unaffected caves.

WHAT IS BEING DONE

Nationally:

- U.S. Fish and Wildlife Service developed a national White-Nose Syndrome Response Plan, and is conducting, funding, and coordinating research.
- Universities, government agencies and non-profit organizations are researching possible causes and solutions.
- Protocols are in place for systematic action to protect bats, document WNS events and population changes. Restrictions (some voluntary, some mandatory) are being placed on cave visitation to help protect hibernacula.

Delaware:

- Part of national and multi-state agency teams working to track the disease, plan research and find answers.
- Collecting information on location and size of summer colonies for population monitoring.
- Managing a volunteer project (Bat Spotters) to adopt and study Delaware's maternity colonies.
- Examining live and dead bats for signs of White-Nose Syndrome. Collecting samples from individual bats for DNA and WNS analysis.

DE Little brown bat with heavy wing scarring. Photo: DEFW